SUPPLEMENTAL PHASE II ENVIRONMENTAL SITE ASSESSMENT 13 DEPOT STREET WINDHAM, MAINE

EXECUTIVE SUMMARY

In 2004, Jacques Whitford excavated ten test pits and collected five surface soil samples. Three samples from the test pits were analyzed for Gasoline Range Organics (GRO) and volatile organic compounds (VOCs). All soil samples were screened with a photoionization detector (PID). Two surface samples were analyzed for metals and PCBs.

The following known or suspect Recognized Environmental Conditions, Historical Recognized Environmental Conditions and/or De Minimis Conditions were identified at the Site:

- 1. Gasoline contaminated soil was encountered during the removal of the gasoline UST in 1993.
- A floor drain was observed in the garage building. According to the owner, the drain discharges directly to the subsurface below the garage. Oil staining was observed on the floor near the drain. No high PID or PCBs were detected in the sediment in the floor drain.
- 3. Oil staining on the ground surface.
- 4. Arsenic exceeding MEDEP's residential soil criteria in surface soil samples.
- 5. Suspect asbestos containing material (ACM) and lead based paint (LBP) in the insulation of the walls of the 10,000 gallon AST.

Based on the RECs, Jacques Whitford recommended the following actions:

- 1. Completion of ACM survey.
- 2. Completion of concrete coring and hand augering adjoining the garage floor drain.
- 3. Submission to the MEDEP Voluntary Response Action Program (VRAP).
- 4. Additional soil investigation in the vicinity of the former UST, and removal of petroleum-contaminated soil with PID readings that exceed the MEDEP Baseline-2 standard.

In 2005, Ransom Environmental Consultants, Inc. (Ransom) met with the Maine Department of Environmental Protection (MEDEP) regarding the Site history and pathway to secure a No-Action Assurance letter from MDEP and a Certificate of Completion once the VRAP conditions had been fulfilled. The following direction was provided by MEDEP for the Site environmental conditions:

- Gasoline-impacted soils would require remediation to MEDEP Intermediate guidelines (5 mg/kg laboratory result). To guide soil removal activities, a 50 ppm PID field-screening target was assigned for the designation of soils at/around 5 mg/kg.
- Soil visibly impacted by motor oil or other petroleum products (such as surface staining near auto transmissions or other automobile equipment) would require removal and offsite disposal or reclamation.

This Supplemental Phase II ESA was completed at the 13 Depot Street property to further investigate the RECs identified during the Jacques Whitford investigation and was undertaken at the direction of the Town of Windham Brownfields program. On October 26 and November 4, 2010, Summit performed the following work as part of the Phase II ESA for the Site:

- Advanced soil borings at eleven locations and installed and developed four on-site monitoring wells to characterize groundwater on the Site.
- Collected three soil gas samples, and one duplicate, to determine if impacts exist within this media adjacent and beneath the building on the Site.
- Collected eight surficial soil samples from on-site to determine surficial site conditions.
- Collected building materials that were suspect for asbestos.
- Subcontracted a lead-based paint survey of building components by Atlantic Environmental Services (AES).

Soil and groundwater samples collected from Site investigations were submitted to Resource Laboratory (Resource) in Portsmouth, New Hampshire for laboratory analysis. Soil gas samples collected from Site investigations were submitted to Alpha Analytical in Mansfield, Massachusetts for laboratory analysis.

Soil results from background locations exhibited elevated concentrations of arsenic (BK-B-01, SK-SS-02 and BK-SS-03) as well as several polycyclic aromatic hydrocarbons (PAHs) at BK-B-01 above the MEDEP Remedial Action Guidelines (RAGs) for all four standards (residential, park user, outdoor construction worker, and excavation/construction worker). Based upon these results the elevated results observed on-site are believed to be due to the past industrial usage of the entire area and not a specific release on-site.

Surficial soil samples from SS-04 (and its duplicate SS-10) reported cadmium above the MEDEP RAGs for cadmium. These results are most likely attributable to the past usage of the property as a vehicle repair facility. As the background locations were all non-detect (ND) for cadmium, these results appear to be site-specific and therefore would require further delineation and remediation prior to redevelopment.

The groundwater sample collected at MW-11 reported elevated PAH compounds and the samples collected from MW-02 (and its duplicate MW-08) reported elevated arsenic concentrations above the MEDEP Maximum Exposure Guidelines (MEGs). As a background location could not be established due to the shallow nature of bedrock in the area, these impacts may be due to off-site conditions. As public water is provided to the site and the surrounding properties, these impacts do not currently pose a risk.

Air samples reported low concentrations of petroleum constituents; however these results were below the Maine Center for Disease Control's (CDC) indoor air target levels.

Asbestos was reported, by sampling, to be present within the floor tile in the office area of the storage building (the building closest to Depot Street). Lead-based paint (LBP) was identified within and on the exterior of all three on-site buildings.

In addition, during the field reconnaissance, a pile of coal was observed to the northwest of the Depot Building and a pile of asphalt shingles was also observed to be present to the northeast of the Depot building. A determination to not sample the actual coal was made by the MEDEP and Summit. A sample of the asphalt shingles was collected during the asbestos sampling and was reported to not contain asbestos. Both of these piles were determined by MEDEP staff to be solid waste issues and therefore would require removal by the Solid Waste Unit at the MEDEP.

Based on these findings, Summit recommends the following:

- 1. Cadmium impacts reported at SS-04 should be delineated and remediated prior to redevelopment of the property.
- 2. The coal should be removed from the property and the soil beneath it tested to determine if impacts are present above remedial action standards.
- 3. In general, the ACM floor tile identified within the Storage Building was observed to be in good condition. Should this material be impacted by future renovations or demolition, the floor tile must be removed prior to commencement of these activities. ACM abatement must be performed using approved methods in accordance with applicable regulations established by the USEPA, OSHA and the MEDEP.
- 4. If redevelopment of the site buildings is to include the removal of paint from surfaces, lead-based paint abatement must be performed using approved methods in accordance with applicable regulations established by the USEPA, OSHA and the MEDEP.
- 5. In order to maintain a release of liability letter from the DEP, potential owners/developers should comply with the existing Voluntary Response Action Program (VRAP) No Action Assurance Letter.

TABLE OF CONTENTS

EXECUTIVE SUMMARY I			
1.0	INTRO	DUCTION	1
1.1	PURPOSE1		1
1.2	SPECIAL TERMS AND CONDITIONS		1
1.3	LIMITATIONS AND EXCEPTIONS OF ASSESSMENT		1
1.4	1.4 SITE DESCRIPTION AND SETTING		1
1.5	1.4.1 1.4.2 1.4.3 RECO	Physical SettingSite History and Land UseAdjacent Property Land UseGNIZED ENVIRONMENTAL CONDITIONS	2 2
2.0 INVESTIGATION METHODOLOGY		IGATION METHODOLOGY	3
2.1	2.0.1 2.0.2 2.0.3 2.0.4 2.0.5 BACK	Supplemental Records Review Conceptual Site Model Chemical Testing Plan Deviations from the Work Plan Field Explorations and Methods GROUND SAMPLES	3 4 5 5
2.2	2.2 SITE SAMPLES		5
2.3	2.2.1 2.2.2 2.2.3 2.2.5 2.2.6 SAMP	Soil Samples Groundwater Samples Soil Gas Samples Asbestos Containing Materials Lead-Based Paint LING AND CHEMICAL ANALYSES METHODS	6 6 7
3.0	2.3.1 2.3.2 2.3.3 EVALUA	Soil Groundwater Soil Gas ATION AND PRESENTATION OF RESULTS	7 7
3.1			
3.2	3.1.1 3.1.2 ANAL	Geologic Setting	7 7
4.0	3.2.1 3.2.2 CONCL	BackgroundSite Specific Samples	8
4.1	VERIFICATION OF CONCEPTUAL SITE MODEL		
4.2	EVALUATION OF MEDIA QUALITY		
4.3	AFFECTED MEDIA		
5.0	RECOMMENDATIONS14		

6.0 SIGNATURE AND QUALIFICATIONS15

Tables:

Table 1: Soil Sample Analytical Results

Table 2: Ground Water Sample Analytical Results

Table 3: Air Sample Analytical Results

Figures:

Figure 1: Site Location Map Figure 2: Sample Location Map

Appendices:

Appendix A: Boring Logs

Appendix B: Resource Laboratories and Maine Environmental Laboratory Reports

Appendix C: X-Ray Fluorescence Results

Appendix D: Alpha Analytical Laboratory Reports

Appendix E: Atlantic Environmental Services Lead-Based Paint Survey

Appendix F: EMSL Asbestos Results

SUPPLEMENTAL PHASE II ENVIRONMENTAL SITE ASSESSMENT 13 DEPOT STREET WINDHAM, MAINE

1.0 INTRODUCTION

This Supplemental Phase II Environmental Site Assessment (ESA) was conducted, by Summit, for the Town of Windham under a grant (BF96110101) from the United States Environmental Protection Agency (USEPA). The Scope of Work was developed in conjunction with MEDEP and USEPA to address Recognized Environmental Conditions identified in the Phase II report completed by Jacques Whitford. A Site Specific Quality Assurance Project Plan (SSQAPP) was prepared for the Site and approved by the United States Environmental Protection Agency (EPA) prior to the field activities proceeding on the site. As a portion of the SSQAPP, a Conceptual Site Model (CSM) and sampling plan were created to assist in guiding field activities and setting project goals.

1.1 PURPOSE

Summit was retained by the Town of Windham using funding provided by EPA Brownfields Assessment Grant #BF96110101 to conduct this Phase II ESA to investigate subsurface conditions at the 13 Deport Street property in order to identify and delineate areas of contamination, fill data gaps identified and provide information to develop a feasibility study for Site remedies as needed. The current plans for the property are to redevelop the property for residential usage.

1.2 SPECIAL TERMS AND CONDITIONS

This report has been prepared for the exclusive use of the Town of Windham and Hudson Realty Group, LLC (Brownfields Program applicant) and should not be reproduced or disseminated without the written approval of Summit or the Client or the Program applicant. Summit has retained a copy of this report. No additions or deletions are authorized without the written consent of Summit. Use of this report in whole or in part by parties other than the Client or Program applicant or his/her authorized agent is prohibited.

1.3 LIMITATIONS AND EXCEPTIONS OF ASSESSMENT

The location of the current building provided a limitation to the investigation. If buildings are demolished the footprints should be evaluated by a qualified environmental professional to determine if further investigations are necessary.

1.4 SITE DESCRIPTION AND SETTING

The Site consists of one parcel that is approximately 40,850 square feet (sf) in area. The Site is occupied by the 994 sf former railroad station believed to have been built at the turn of the century, a 1,320 sf garage built in the 1960s, and a 3,420 sf warehouse built in the 1930s. The garage building has a floor drain and a 275-gallon fuel oil aboveground storage tank (AST) with fill and vent pipes. The warehouse has a 275-gallon fuel oil AST. Previously, a 500 gallon gasoline underground storage tank (UST) was removed in 1993 and a 10,000 gallon fuel oil AST has since been removed. There are several paved parking areas on the property, and up to thirty abandoned automobiles were known to be stored at the Site in the parking areas. Maine Central Railroad tracks abut the property to the east.

The Windham Tax Assessor's Office identifies the Site as Lot 6, on Map 38. The Cumberland County Registry of Deeds has a legal description of the Site recorded in Book 23835 Page 21.

1.4.1 Physical Setting

The United States Geological Survey (USGS) Gorham, Maine 7.5 Minute Topographic Quadrangle Map, which includes the Site and surrounding properties, shows that the Site is at an approximate elevation of 150 feet above mean sea level (Figure 3-1). Review of this map shows that the regional topography slopes southwest toward the Presumpscot River.

The Bedrock Geology Map of Maine (Hussey, 1983) describes bedrock underlying the Site as belonging to the Vassalboro Formation, made up of calcareous sandstone and interbedded limestone and/or dolostone.

The Surficial Geology of the Gorham Quadrangle, Maine map (Smith, 1999) indicates that surficial deposits in the vicinity of the Site are made up of the Presumpscot Formation consisting of massive to laminated gray and blue-gray (weathering to brown) silt and silty clay.

The Significant Sand and Gravel Aquifer Map of the Gorham Quadrangle, Maine (Neil, 1998) indicates that the Site is not underlain by a mapped significant sand or gravel aquifer. The nearest mapped significant sand or gravel aquifer is located approximately 3-miles south of the Site. Based upon the USGS topographical map for the Site and surrounding area, groundwater flow is inferred to be generally southwesterly.

Further discussion of site conditions is provided in Section 3.0.

1.4.2 Site History and Land Use

Historic records and information from the Site Owner indicate that the Site was used as a an automobile garage in the recent past. Prior to this it was used as a storage facility.

1.4.3 Adjacent Property Land Use

Properties adjacent to the 13 Depot Street property include:

North Depot Street and self-storage facility beyond.

South Former Keddy Mill.

East Maine Central Railroad and residential property beyond.

West Former Keddy Mill.

1.5 RECOGNIZED ENVIRONMENTAL CONDITIONS

In preparation for this investigation, Summit reviewed the previous Phase II report and the following is a summary of the Recognized Environmental Conditions (RECs) which warranted further investigation:

- Gasoline contaminated soil was encountered during the removal of the gasoline UST in 1993.
- A floor drain was observed in the garage building. According to the owner, the drain discharges directly to the subsurface below the garage. Oil staining was observed on the floor near the drain. No high PID or PCBs were detected in the sediment in the floor drain.
- Oil staining on the ground surface.

- Arsenic exceeding MEDEP's residential soil criteria in surface soil samples.
- Suspect asbestos containing material (ACM) and lead based paint (LBP) in the insulation of the walls of the 10,000 gallon AST.

2.0 INVESTIGATION METHODOLOGY

The scope of work completed for this assessment was essentially as described in the SSQAPP, which was provided to MEDEP and USEPA and approved in June 2010. The SSQAPP included our Conceptual Site Model, which, along with the results of the Phase I Assessment, provided the technical basis for the number and location of samples, the media sampled and laboratory analyses to be completed. Table 3-3 from the SSQAPP summarized the scope of investigations.

The SSQAPP also provided a complete description of the field and laboratory methods to be used. A brief description of methods used including any activities that differed notably from the methods described in the SSQAPP is provided below.

2.0.1 Supplemental Records Review

Records were reviewed at the MEDEP's Augusta office and the Town of Windham's offices prior to the commencement of Phase II activities for this Site.

2.0.2 Conceptual Site Model

A conceptual Site model was prepared that summarized contaminant source areas of concern, contaminants of concern, surface water drainage and subsurface conditions that define possible migration pathways, and the potential exposure routes and receptors.

Based on the results of the Jacques Phase II ESA, the contaminants of concern (COCs) are similar for all four of the AOCs based upon the following:

AOC 1 - Former UST

The UST removed in 1993 is known to have contained gasoline. COCs associated with this area include gasoline, VOCs, and lead which may have impacted surface and subsurface soils and groundwater as a result of tank failure (i.e., leaking or cracking) or via tank overfills. Additionally, the parking of abandoned automobiles may have impacted surface soils in this area. Contaminated soil may also serve as a source for potential vapor migration through the vadose zone. Migration of the COCs would be as an LNAPL or dissolved phase in the groundwater, and in a vapor phase within the vadose zone. Public water is supplied to the area around the site so the groundwater does not pose a risk unless encountered during construction or remediation activities.

Potential exposure routes associated with the COCs in this AOC include direct contact with impacted soils, direct contact with impacted groundwater; ingestion of contaminated dust, particularly during any construction activity at the Site; and inhalation of volatile organic vapors migrating into buildings or during site earthwork.

AOC 2 - Floor Drain

A floor drain was observed to be present within the garage building. No documentation exists regarding the terminus of this drain, although a prior Site owner stated that the drain terminated in the soils directly beneath the building.

COCs associated with this area include oils, VOCs, PBCs and metals (arsenic, lead, and cadmium) which may have impacted surface and subsurface soils and groundwater as a result of discharge from the floor drain into the soils beneath the building. Additionally, the parking of

abandoned automobiles may have impacted surface soils in this area. Contaminated soil may also serve as a source for potential vapor migration through the vadose zone. Migration of the COCs would be as an LNAPL or dissolved phase in the groundwater, and in a vapor phase within the vadose zone. Public water is supplied to the area around the site so the groundwater does not pose a risk unless encountered during construction or remediation activities.

Potential exposure routes associated with the COCs in this AOC include direct contact with impacted soils, direct contact with impacted groundwater; ingestion of contaminated dust, particularly during any construction activity at the Site; and inhalation of volatile organic vapors migrating into buildings or during site earthwork.

AOC 3 – Remainder of Site

A 10,000 gallon fuel oil AST was removed from the western portion of the Site. Additionally, prior Phase II ESA soil samples were analyzed for gasoline range organics/diesel range organics (GRO/DRO) which was the MEDEP-approved analysis at the time. Beginning in 2009, MEDEP now requires extractable petroleum hydrocarbons/volatile petroleum hydrocarbons (EPH/VPH) in lieu of GRO/DRO. Therefore, numerous soil sample locations were re-sampled for EPH/VPH. Additionally, the parking of abandoned automobiles may have impacted surface soils in this area.

COCs associated with this area include petroleum fractions, and VOCs which may have impacted surface and subsurface soils and groundwater as a result of discharge from the AST or from leakage from the abandoned automobiles stored at the Site. In addition, lead, cadmium, and arsenic were also sampled as they may have leached from natural soils or may have been introduced through automotive activities (i.e. lead-acid batteries, automotive parts). Other metals were eliminated from the sampling protocol based upon high MEDEP cleanup standards, potential for their existence based upon site usage, or past on-site sampling activities clearing them from consideration. Contaminated soil may also serve as a source for potential vapor migration through the vadose zone. Migration of the COCs would be as an LNAPL or dissolved phase in the groundwater, and in a vapor phase within the vadose zone. Public water is supplied to the area around the site so the groundwater does not pose a risk unless encountered during construction or remediation activities.

Potential exposure routes associated with the COCs in this AOC include direct contact with impacted soils, direct contact with impacted groundwater; ingestion of contaminated dust, particularly during any construction activity at the Site; and inhalation of volatile organic vapors migrating into buildings or during site earthwork.

2.0.3 Chemical Testing Plan

The conceptual model assumed that a relatively shallow groundwater table was present at the site and it was anticipated that contaminants, such as petroleum and heavy metals, in shallow soil (if any) would migrate to groundwater and subsequently flow southwest toward the Presumpscot River. Groundwater was encountered within the installed monitoring wells between 5 and 7 feet bgs.

Soil samples were collected and sent to Resource to be analyzed for arsenic, cadmium, lead, Volatile Organic Compounds (VOCs), Volatile Petroleum Hydrocarbons (VPH), and Extractable Petroleum Hydrocarbons (EPH). Soil samples were compared to the MEDEP Remedial Action Guidelines (RAGs) for Residential, Park Users, Outdoor Commercial Workers, and Excavation and Construction Workers. These standards were selected based upon the current usage of the property and surrounding properties and the potential for redevelopment of the property.

Groundwater samples were collected and sent to Resource to be analyzed for arsenic, cadmium, lead, VOCs, VPH, and EPH. Groundwater samples were compared to the MEDEP Maximum Exposure Guidelines (MEGs) and the Petroleum Cleanup Standards for drinking water.

Soil vapor samples were collected and submitted to Alpha Analytical to be analyzed for Petroleum Hydrocarbons in Air by the MADEP APH method. The soil vapor sample results were compared to MEDEP's Draft Indoor Air Targets (IAT).

2.0.4 Deviations from the Work Plan

During the field investigation minor adjustments were made with respect to sample analyses based upon location of the sample, observed impacts, and possible impacts to the area.

Groundwater was not encountered in the presumed background location, so groundwater results are compared to MEDEP MEGs only.

During field reconnaissance, a pile of coal was observed to the northwest of the Depot building and a pile of asphalt shingles was observed to the northeast of the Depot building. A discussion with MEDEP on-site determined that neither pile would be sampled for environmental issues as these two piles are a solid waste issue and not a brownfields issue.

2.0.5 Field Explorations and Methods

Prior to initiating intrusive activities, Summit contacted DIGSAFE of Maine (DIGSAFE) to determine the location of underground public utilities on-site in the work area. DIGSAFE personnel indicated that local gas, electric, and phone companies would be notified. In addition, Summit contacted the local water and sewer districts to have water and sewer mains marked in the street and where they entered the Site.

2.1 BACKGROUND SAMPLES

Three background samples (BK-SS-01, BK-SS-02, and BK-B-01) were collected from 0-2' bgs for arsenic, cadmium, and lead, analyses to ascertain if metal impacts discovered during on-site activities could be attributed to off-site sources or naturally occurring concentrations. The locations were selected based their locations upgradient from the site buildings.

In addition, one of these soil samples (BK-B-01) was submitted to Resource for VOC, VPH, and EPH analyses. The results from the samples collected on the Site are compared to the results obtained from these background samples.

No background well could be installed due to refusal at shallow depths in the area adjacent to the northeast corner of the Site building.

2.2 SITE SAMPLES

2.2.1 Soil Samples

Summit oversaw the advancement of eleven soil borings (designated BK-B-01, B-02 through B-11) by Environmental Projects, Inc. (EPI) on October 26, 2010 using direct-push technology. EPI collected continuous soil samples utilizing a four-foot dual tube sampler with dedicated disposable acetate sampling sleeves. Summit classified soil samples in the field.

Refusal was encountered in all of the soil borings and ranged from 5' (BK-B-01) to 11.9' (B-11) below ground surface (BGS). Groundwater was encountered at four locations (B-02, B-09, B-10 and B-11) at approximately four feet BGS. Refer to Figure 2 for soil boring locations and Appendix A for boring logs and the PID readings recorded from soil samples. Soil samples were field screened for total organic vapors (TOVs) and total metals. Summit field-screened soil

samples using a *MiniRae* 3000[®] field-portable PID equipped with a 10.6 eV probe, calibrated as benzene in accordance with the manufacturer's specifications. PID results ranged from non-detect (ND) to 42 parts per million by volume (ppmv). PID results are included on Soil Boring Logs in Appendix A.

In addition, Summit field screened for cadmium and lead using the MEDEP's Niton X-Ray Fluorescence (XRF) device.

A detailed discussion of results is provided in Section 3.0.

2.2.2 Groundwater Samples

Groundwater samples were collected from the four installed on-site monitoring wells, MW-02, (and its duplicate MW-08), MW-09, MW-10, and MW-11, and submitted to Resource.

2.2.3 Soil Gas Samples

Soil gas samples were collected from an area in the crawlspace of the storage building (SG-03), as well as beneath the slabs of the garage building (SG-02 and its duplicate SG-02A) and the former Depot building (SG-01) to determine existing soil gas concentrations. See Figure 2 for sample locations. A detailed discussion of results is provided in Section 3.0.

2.2.5 Asbestos Containing Materials

Asbestos identification surveys were completed for the three buildings present at the 13 Depot Street property in Windham, Maine. The surveys were conducted in accordance with the MEDEP Chapter 425 Asbestos Management Regulations promulgated May 29, 2004. Each survey was completed to provide the MEDEP with information regarding the presence of Asbestos-Containing Materials (ACM) present on the interior and exterior of each of the structures present. Ms. Suzanne Chase (Summit), an asbestos inspector licensed by the MEDEP, performed the field surveys on November 4, 2010. Completion of the asbestos identification surveys included:

- Visual identification of suspect ACM on the interior and exterior of the structure;
- Collection of bulk samples of the identified suspect ACM in accordance with MEDEP regulations; and
- Quantification of ACM identified by laboratory analysis.

An asbestos identification survey is subject to a variety of limitations and may not be able to identify all ACM present throughout a structure. Limitations to be considered in interpreting the results of the survey performed on this building include the following:

- · Variations in building materials used during construction and subsequent renovations;
- Accessibility at the time of the survey; and
- Condition of the structures at the time of the survey.

Bulk samples of suspect ACM collected during the survey were submitted to EMSL Analytical, Inc. (EMSL) of Woburn, Massachusetts for analysis. The method used to analyze the bulk samples collected during this survey was the recommended United States Environmental Protection Agency (USEPA) procedure of Polarized Light Microscopy (PLM) with dispersion staining. Samples were analyzed at the EMSL laboratory, which is certified to perform asbestos analysis by both the National Voluntary Laboratory Accreditation Program (NVLAP) and the

American Industrial Hygiene Association (AIHA). EMSL is a MEDEP licensed Asbestos Analytical Laboratory. Complete laboratory results and chain of custodies are included as Attachment F.

2.2.6 Lead-Based Paint

Lead testing was performed, by Atlantic Environmental Services on November 4, 2010, throughout the Site buildings to identify the presence of LBP on accessible building components. Accessible areas and surfaces were tested utilizing an X-Ray Fluorescence Device (XRF). Results are discussed in section 3.2.2.5 and Appendix E.

2.3 SAMPLING AND CHEMICAL ANALYSES METHODS

2.3.1 Soil

During the field investigation minor adjustments were made with respect to sample analyses based upon location of the sample, observed impacts, and possible impacts to the area.

Based upon visual observations of potential soil contamination and field screening results, Summit collected soil samples for PCBs, EPH, VOCs, and arsenic, cadmium, and lead from borings B-02 (2-4'), B-03 (0-2'), B-06 (4-5'), B-10 (0-4'), and B-11 [and its duplicate B-12] (0-4') and submitted them to Resource for analysis. In addition, samples were collected from B-09 (4-7') and submitted to Resource for analysis of PCBs, EPH, VOCs.

Surficial samples were also collected from across the Site and, based upon their locations, submitted to Resource for analysis of VPH, EPH, VOCs, PCBs, and arsenic, cadmium, and lead.

2.3.2 Groundwater

Groundwater samples were collected from MW-02 (and its duplicate MW-08), MW-09, and MW-10 and submitted to Resource for analysis of VPH, EPH, VOCs, and arsenic, cadmium, and lead. Groundwater samples were collected from MW-11 for EPH, arsenic, cadmium, and lead.

2.3.3 Soil Gas

Summit installed push point samplers to depths of two to three feet BGS. The inner rod was pulled back to expose the screen. A peristaltic pump was used to evacuate soil gas and to ensure that groundwater was not encountered. Air samples were then collected with a silicone and teflon tubing into a 30-minute SUMMA canister.

Air samples were collected from SV-01, SV-02 (and its duplicate SV-02A), and SV-03, and submitted to Alpha Analytical of Mansfield, Massachusetts for APH (petroleum hydrocarbons) analysis and the chlorinated compounds TO-15 (volatile organics). See Figure 2 for sample locations.

3.0 EVALUATION AND PRESENTATION OF RESULTS

3.1 SUBSURFACE CONDITIONS

3.1.1 Geologic Setting

Soil encountered in borings at the Site typically consisted of silty-sand grading to silt extending from ground surface to between five and twelve feet where refusal on bedrock was encountered on the Site.

3.1.2 Hydrogeologic Conditions

Groundwater was only encountered in four boring locations (B-02, B-09, B-10, and B-11) where it was encountered at approximately five feet below ground surface in all four locations.

Refusal on presumed bedrock limited the installation of additional wells on the property and the observation of groundwater.

In general, ground water flow is interpreted to be southwesterly, discharging to the Presumpscot River, located approximately 200 feet to the southwest. See Figure 2 for a ground water flow depiction.

3.2 ANALYTICAL DATA

3.2.1 Background

Summit collected three surface samples (BK-B-01, BK-SS-02, and BK-SS-03) using precleaned trowels. The PID field screening results for the soil samples collected were noted as non-detect for all three samples.

The sample results for BK-B-01 for several EPH compounds exceeded the MEDEP. Sample results from the samples for lead ranged from 7.2 to 35 mg/kg for the three locations. Sample results from the samples for arsenic ranged from 14 mg/kg to 25 mg/kg.

3.2.2 Site Specific Samples

3.2.2.1 Soil

Based upon the results of the site-specific samples and the lack of evidence separating portions of the property into AOCs, the results of the site investigation are compared to the background results and not separated into the AOCs described in the QAPP.

All site-specific soil samples screened on-site with the XRF were reported as below the detection limit for cadmium and below the residential RAG for lead.

Metals results for the site-specific samples analyzed off-site were within the background ranges with the exception of cadmium at SS-04 and its duplicate sample SS-10. This location was within the gravel parking area where automobiles were parked during past site activities and may be due to this usage. These results were above the residential, commercial outdoor worker, and excavation and construction worker standards.

Site samples for PAHs, although elevated, were within or near the background location (BK-B-01) results. As a result of this, it is not believed that the PAH results are indicative of an on-site release and are more likely due to the past industrial uses within the area.

See Table 1 for the analytical results.